

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
22 February 2007 (22.02.2007)

PCT

(10) International Publication Number
WO 2007/021259 A1

(51) International Patent Classification:
F23D 14/64 (2006.01) *F23D 11/40* (2006.01)

(21) International Application Number:
PCT/US2005/028500

(22) International Filing Date: 12 August 2005 (12.08.2005)

(25) Filing Language: English

(26) Publication Language: English

(71) Applicant (for all designated States except US): **PROTO-TECHNICS, INC.** [US/US]; 180 South Almond Street, Orange, VA 22960 (US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **BOSKET, James** [US/US]; 16487 Constitution Highway, Orange, VA 22960 (US).

(74) Agent: **MCDOWELL, Liam**; c/o **YOUNG & THOMPSON**, 745 South 23rd Street, Arlington, VA 22202 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM,

AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

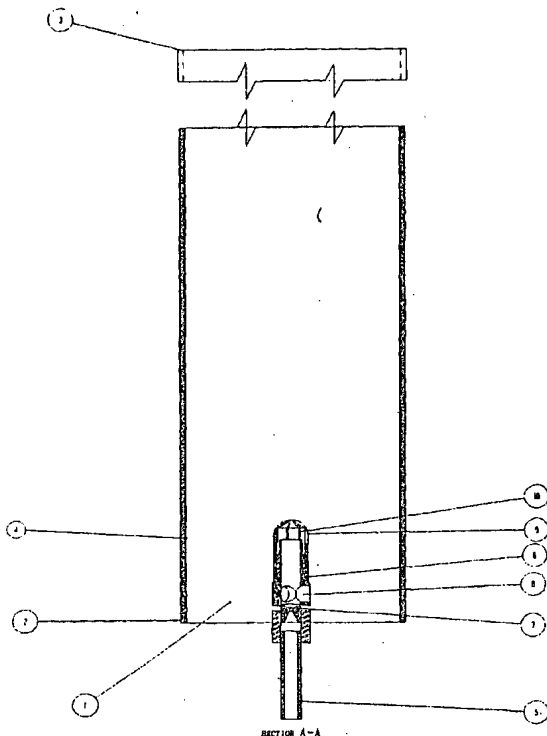
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- with amended claims and statement

[Continued on next page]

(54) Title: **TURBULENCE BURNER WITH VORTEX STRUCTURES**



(57) Abstract: A fuel burning device includes a tubular combustion cylinder open at opposing first and second ends. A fuel inlet pipe has a first end extending through the first end of the combustion cylinder partially into the combustion cylinder and a second end extending outside of the combustion cylinder. The fuel burning device also includes a burner head connected to the first end of the fuel inlet pipe and an orifice connected between the burner head and the first end of the fuel inlet pipe. The burner head is structured and arranged so that combusted fuel discharged at the second end of said combustion cylinder has reduced CO and NO_x emissions.

WO 2007/021259 A1



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.